

# In quest of publicity: the science–media partnership of the *Galathea* Deep Sea Expedition from 1950 to 1952

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The *Galathea* Deep Sea Expedition from 1950 to 1952 combined oceanographic research with simultaneous science reporting and strategically seeking publicity. In effect, the expedition organizers ventured into a science–media partnership. From the beginning, reporting scientific exploration to the general public at home and abroad was considered an essential part of the expedition. Combining scientific objectives with publicity concerns, the expedition built on boundary work performed by boundary workers separating science from the media. Several boundary objects were mobilized to facilitate interactions across the cultural border between scientists and journalists. In particular, the mythological sea serpent domesticated by scientists and fully adopted by journalists played an important role in aligning the scientific aspects of the expedition with publicity and science reporting. The historical narrative of the expedition feeds into contemporary discussions about the dominant discourse on science and the media.

## 1. Introduction

The dominant discourse on science, the media and the public suggests that science alone produces genuine, true knowledge and that the media, whether mass media, museums, films, plays, science events, or other media for science communication, simply transmits or translates scientific knowledge to the general public (Bucchi, 1998; Dornan, 1990; Hilgartner, 1990; Lewenstein, 1995; Shinn and Whitley, 1985; Weingart, 1998). Perhaps the most notable feature of this view is that it clearly defines the boundaries of science, the media, and the public, while also prescribing particular relations between scientists and people in the media world. Today, the dominant discourse has become common knowledge to the extent where any attempt to bypass its definite demarcations, to obstruct its linear flow of knowledge, or to upset the social roles and the competencies associated with it is construed as “deviant” (Bucchi, 1998). Even alternative models emphasizing engagement and dialogue between science and the public still retain certain linearity from science via the media to the public with respect to the passing back and forth of information, ideas, and values (Wynne, 2006).

Importantly, the astonishing self-evidence of today's dominant discourse is related to the rise of the new profession of science journalism in the early and mid-twentieth century (Dornan, 1988). In the United States, most science writers and newly formed associations on science journalism collaborated closely with scientists, adopting scientific values and scientism (Dornan, 1989; Lewenstein, 1992). Similarly, J.G. Crowther, British science journalist, and Børge Michelsen, who worked as a science journalist in Denmark before taking on a job as the leader of UNESCO's Division of Science and Its Popularization in 1948, both valued science and both believed that science journalism was based firmly on scientific values (Gristock, 2006; Nielsen, in press). As a result, after World War II the dominant discourse became an important element in the shaping of an independent professional identity for science journalists, while also serving scientists in their struggle for increased public support, morally as well as financially, and feeding into the increasing public interest in science.

What is missing from these stories based on recent scholarship is more insight into the actual, historical construction of the self-evident relations between science, the media and the public, especially in the period after World War II. This paper looks closer at a critical and highly important episode in the history of the dominant discourse, namely the *Galathea* Deep Sea Expedition from 1950 to 1952. Attention to the differentiations performed by scientists, journalists and others in specific historical settings allows a shift from criticizing the self-evident, dominant discourse to problematizing the enormous amount of work required to stabilize such self-evidence despite contemporary contestation and in the face of future uncertainties. Besides establishing the historical construction of today's self-evident associations between science and the media, we might even find that, historically, the dominant discourse is not as coherent and perhaps not even as dominant or homogeneous as it might appear from the brief narrative above.

## 2. Historical context

The Danish *Galathea* Deep Sea Expedition was a pioneering effort in combining scientific exploration with on-board, on-line (telegraph lines, that is) science reporting and communication (Bruun et al., 1956; Wolff, 2000). Its primary scientific objective was deep sea research in the oceanic trenches of the East Pacific and adjacent waters. The expedition also became widely known because of the extensive attention given to what at the time was alternately referred to as "publicity" or "information" or simply, "the press." These expressions covered a variety of activities, most notably communicating by newspapers, radio, television, and other channels of communication, e.g., films, magazine articles etc., the expedition and its scientific results to the general public at home and abroad. Different kinds of entertainment in the foreign ports that the expedition called at were also part of what "seeking publicity" signified to the organizers of the expedition.

Merging scientific objectives with news standards and an obligation to entertain in order to "wave the flag," the expedition was among the first organized science-media partnerships in the domain of scientific expeditions.<sup>1</sup> The notion of a science-media partnership is my way of making sense of this innovative feature of the expedition. I use the term partnership in order to emphasize the mutual, constitutive relationship between the scientific and the publicity aspects of the expedition. Even though, in compliance with the dominant discourse of today, the partnership was clearly dominated by science, the presence of the media also did exert influence on the expedition as a whole. Importantly, the *Galathea* Deep Sea Expedition reflected and fed on the emerging public interest in science after the war, but also introduced into public discourse new uncertainties and risks affiliated with merging science and publicity.

Whereas, today, science–media partnerships seem to become more ordinary to the extent where science is medialized (Ekström, 2004; Weingart, 1998), the *Galathea* Deep Sea Expedition occurred at a time in history where such partnerships were still in the making. There is, of course, a long tradition that scientific expeditions and science in the field are popularized (Bravo and Sörlin, 2002; Finnegan, 2004; Kuklick and Kohler, 1996). Before the mid-twentieth century, dedicated explorers themselves wrote heroic narratives for the masses. For the most part, these were personal accounts that, freely edited by their publishers with an eye firmly on the market, reflected the rigors of exploration and seldom paid too much attention to scientific details (Distad, 2003).

The action taken to communicate the *Galathea* Deep Sea Expedition to the general public differs in at least three ways from these earlier, more sporadic and much more “heroic” efforts: 1) popularizing the expedition was institutionalized in the publicity section aboard; 2) the publicity section worked in close collaboration, and simultaneously with the scientific section; and 3) seeking publicity was conceived as an essential part of the expedition from the outset. In many ways, the *Galathea* Deep Sea Expedition set out in quest of publicity. Thus, popularization or publicity influenced the whole of the expedition, not just later efforts to narrate the expedition to the public.

In the immediate post-war, reconstruction era, science communication and science policy surfaced as important issues for the Danish public. During the war, Danish science journalist Børge Michelsen and Danish scientists affiliated with the social relations of science movement had campaigned against “the proletarianization of science in Denmark” (Nielsen, in press). They argued the case for increased public funding of science. Before the war, private foundations such as the Carlsberg Foundation were the main source of finance for Danish researchers whereas shifting governments took little interest in supporting scientific research. The state took care of higher education and left research to private benefactors. After the war, all this changed dramatically partly as a result of intense lobbying on behalf of Danish scientists, and partly because of the influence exerted by the international science policy ideology later known as the linear model of innovation, led by American efforts such as Vannevar Bush’s (1945) report to the President *Science, the Endless Frontier* (see also Godin, 2006).

In February 1951, while the *Galathea* Expedition was well under way, thousands of scientists and students marched in the streets of Copenhagen to persuade the government to increase its support of research and higher education (Knudsen, 2006). Niels Bohr addressed the Danish public and politicians on the radio, warning that something had to be done right away if the country “was not to be left behind” (cited from Knudsen, 2006: 338). Owing to the financial situation of the country, at first the government was hesitant to concede but, finally, in 1952 The State’s Common Science Foundation was established to support basic research in Denmark. The foundation quickly became known as The State’s Carlsberg Foundation.

To sum up, the *Galathea* Deep Sea Expedition was conceived at a point in time where, still, science popularization was primarily conducted by scientists alone; where, exceedingly, the social relations of science movement and its emphasis on the social importance of science surfaced in the Danish public; and where the scientific and public pressure on the Danish government to provide active support for science was mounting. The expedition organizers navigated in this context and, as we shall see, undertook to make the best of it.

### 3. Boundary workers, boundary work, and ambiguity

The *Galathea* Deep Sea Expedition enforced the institutional, functional and cognitive separation between science and the media, implied by the dominant discourse mentioned above.

However, the narrative of the expedition also reveals the ambiguity involved in science–media partnerships: on the one hand, the *Galathea* Deep Sea Expedition brought together in close collaboration scientists and journalists seeking the same objectives; on the other hand, it also helped establish and confirm the cultural and structural differences between the two professions. Observers have identified the same ambiguity at play in the contemporary “medialization of science” (Ekström, 2004; Weingart, 1998).

The ambiguity enacted by partnerships between science and the media gives rise to what sociologist of science Thomas F. Gieryn (1999) calls cultural contests of credibility. Gieryn draws on recent science and technology studies to argue that the credibility of science is negotiable all the way from internal, scientific communication to public communication of science. In order to resolve issues concerning scientific credibility, scientists and others produce cultural cartographies defining science in relation to other areas of culture and society. Settling what is science vs. non-science is equally important for scientists, journalists, politicians, citizens and others wanting to evaluate scientific credibility and communicate scientific knowledge. This is also evident in other studies concerned with the boundaries of science vis-a-vis those of science popularization (Barton, 1998; Mellor, 2003).

In constructing partnerships, scientists and journalists are concerned about consolidating their own professional autonomy and credibility. Simultaneously, the cultural boundaries of science and journalism are at stake. Bucchi (1998) divides the sub-category of boundary work involving public communication of science into three categories: science vs. non-science, disciplinary and paradigmatic boundary work. The first and most general category is very similar in kind to Gieryn’s boundary work concept and “comprises all those cases in which demarcation concerns the ‘external boundaries’ that separate science from other activities” (Bucchi, 1998: 130). The two latter categories relate specifically to the demarcation of “internal boundaries” between different scientific disciplines or paradigms (see also Smyth, 2001).

Particular actors play an important role in accomplishing boundary work. They are “the quintessential boundary-workers” (Fisher and Atkinson-Grosjean, 2002: 449). They mediate across and negotiate established boundaries, such as those separating academy and industry, or, in the case of the *Galathea* Deep Sea Expedition, science and the media. Central to their work is the creation of partnerships that requires clearly defining the boundaries separating the different stakes involved. The stakeholders may not always subscribe to the demarcation provided by the boundary workers. Boundary workers, therefore, often have to deal with “cultural clashes” that build up when the boundaries of particular partnerships are being questioned by the stakeholders involved. They then have to renegotiate the partnerships proposed or attempt to redefine the identity of stakeholders.

### *Boundary workers of the Galathea Deep Sea Expedition*

The central boundary workers of the *Galathea* Deep Sea Expedition with respect to producing new cultural cartographies of science and the media were zoologist and oceanographer Anton F. Bruun and freelance journalist Hakon Mielche. Together with the captain of the ship, commodore Svend Greve, they were simply known as “the three of the *Galathea*.” Bruun and Mielche organized the expedition and led the science and the publicity department, respectively. The two were instrumental in establishing more or less clear boundaries between science and the media, but also in making sure that science and the media were interoperable despite the “teething troubles” encountered by their innovation, the merging of scientific and publicity-oriented objectives (Mielche, 1956: 293).

Mielche first met Bruun in 1933 aboard the *Monsoon*, the ship that took Mielche and his crew on a one-year expedition from Denmark to Santa Cruz (Mielche, 1938). Bruun merely joined the

expedition on the short journey from Copenhagen to Århus in Jutland in order to instruct two of the members in using some of the fishing implements purchased by Mielche. Bruun had participated in the highly successful Dana Expedition from 1928 to 1930, led by Johannes Schmidt (Wolff, 1981, 2002). On the way to Århus, Bruun told Mielche about his plans for another oceanographic circumnavigation of the globe which was to explore the largely unknown deep sea (Mielche, 1979). Bruun wanted to take Greve along as captain, since the two had worked closely together on the Dana Expedition, and Bruun himself would lead the expedition (the conversation occurred shortly after the death of Johannes Schmidt). Mielche later recalled that Bruun offered him the chance to join this future deep sea expedition:

Bruun told me I was to come along. As head of an entirely new construction within scientific expeditions that was to relate to ordinary people what really went on—and why. Through articles, books, photographs and educational films. At the time, the general public was hostile because of all the money that science “threw away” on silly experiments. (Mielche, 1979: 224)

Because of the worldwide depression of the 1930s, their late night planning was shelved for some time (Wolff, 1967). Meanwhile, Mielche’s career as a travel writer and journalist took shape, while Bruun became known in scientific circles for his dissertation on flying fish and, in the public, for his dedication to science popularization (Wolff, 1981, 2000).

In the summer of 1941, one of Bruun’s public lectures at Denmark’s Aquarium announced by the Danish newspaper *Ekstra Bladet* caught Mielche’s attention (Frib., 1941). The newspaper quoted Bruun as saying that he strongly recommended sending out a deep sea expedition to investigate the then known deepest ocean trench, the Philippine Trench. Bruun told the reporter that if he (the reporter) found the money for the expedition then Bruun would surely lead the whole thing and, moreover, willingly take on the reporter as “Court reporter.” Bruun added: “It might even happen that there would be something very interesting to report on.” This turned out to be Mielche’s clue. He contacted Bruun, and the two got together to devise an expedition model accommodating science and science reporting (Mielche, 1951a).

They began preparing the detailed plans for the scientific and the educational aspects of the expedition, respectively. In spite of the war, they entertained an optimistic hope of launching the expedition in the centennial year of the first *Galathea* Expedition, i.e. in 1945 (Komiteen for Den danske Dybhavsekspedition, 1950a). Bruun got in touch with other Danish oceanographers who, naturally, supported the thought of another large ocean expedition led by Danish scientists. Mielche started fundraising and managed to secure support from the Danish weekly *Illustreret Familie-Journalen* where he was already employed on a freelance basis, and from a few private benefactors. Because of the war, however, Mielche and Bruun had to postpone their initial plan until peacetime (Mielche, 1951a).

Meanwhile, Mielche contacted his friend Leif B. Hendil, editor of *Ekstra Bladet*. Today, Hendil is remembered for his significant role in the rescue of many Jews across the Sound in October 1943 (Hæstrup, 1981). At the time, he was known as the “man who raised the money” (Mielche, 1951a: 29). In the light of the difficult financial situation after the war, Hendil came up with the idea of appealing to Danes living abroad for financial support. He and Mielche produced a pamphlet about the Danish expedition initiative, addressing it to communities of expatriate Danes (Hendil and Mielche, 1945). They carefully explained that the expedition was not going to be a traditional scientific expedition with science as its sole objective and with the public hardly noticing neither departure, nor return. Rather, proceeding along new and more “modern” lines, the *Galathea* Expedition was to combine science and “publicity.” The publicity sought would not only promote Denmark internationally, but also aim at communicating scientific exploration and adventure to the general public.

Hendil and Mielche's appeal was well received and they decided to establish the Danish Expedition Foundation. Danish expatriates contributed a total of eight million cigarettes which alone brought in well over one million Danish kroner, amounting to about one fifth of the total costs of the *Galathea* Deep Sea Expedition (Mielche, 1951a; Spärck, 1956). In April 1948, enough money had been raised to begin looking for an appropriate vessel and the Committee for the Danish Deep Sea Expedition was set up (Bruun and Mielche, 1948). The committee constituted an executive committee with Mielche, Bruun, Vice Admiral Aage H. Vedel (director of the Ministry of Naval Affairs), Ragnar Spärck (professor of zoology at the Zoological Museum), and Prince Axel (chairman of the committee and employed at the East Asiatic Company) as members. The committee also left it to Mielche and Hendil to come up with a scheme for what was called "the publicity service" of the expedition.

### *Boundary work: publicity vs. science*

Together, Mielche and Hendil produced a draft that was distributed to the whole of the committee, in which they outlined the "working basis of the Danish Deep Sea Expedition round the world" (Mielche and Hendil, 1949). Particularly, they dealt with the "publicity-related" activities of the future expedition, but it is also clear from the draft that they believed this work to be inseparable from the scientific aspects. They argued the need for careful management of the division between publicity and science with respect to work program, responsibility and decision-making.

In their draft, Mielche and Hendil (1949) formally divided the expedition into three separate sections, each of which was to have its own leader, own budget and accounts: the scientific, the publicity and the "sailing" section, the last of which designated all that had to do with the operation of the ship. Whereas the scientific and the sailing sections were to be financed by the Expedition Foundation and the state, respectively, the publicity section was to be mainly self-financing. Mielche and Hendil already had obtained offers from Danish Culture Film, producer of educational films, from the Danish Broadcasting Service, and from Mielche's main employer, the weekly magazine *Illustreret Familie-Journalen*. Moreover, the publicity department was to serve the national and international press by contracting on a 50–50 basis with Ritzau's (the Danish media-owned news agency) and Reuters Bureau, respectively. Hakon Mielche was to own exclusive rights on popular monographs about the expedition and on all non-scientific lectures, films, photographs, etc. All press-related inquiries were to pass through Mielche and the publicity section, and those on board would have to sign a contract committing them "to refrain from any direct or indirect kind of news dissemination. The contract must state the copyrights of the expedition on all publicity material, for free or against payment, direct or indirect, during or after the expedition, including private letters and amateur photographs, articles, radio material, interviews, etc." (Mielche and Hendil, 1949: 3).

Handling the ambiguity involved in enabling the kind of close collaboration between science and publicity they wanted, Mielche and Hendil's boundary work implied an institutional and functional division between publicity and science based on a firm, contractual basis for managing border issues such as publication rights, catering for the press, and thus maintaining the public image of the expedition. The organizational structure envisioned by Mielche and Hendil enforced the autonomy of the publicity section and placed certain limitations on the scientists with respect to making public scientific results. In effect, Mielche and Hendil suggested the publicity section be given wide-ranging powers. The publicity section was to seek publicity on behalf of the expedition as such, but also to communicate science to the broader public.

Having launched his and Hendil's visions about publicity, Mielche then joined forces with Bruun in defining the new cultural cartography of scientific exploration and the generational change needed in order to accommodate the partnership between science and publicity that formed the basis of the *Galathea* Deep Sea Expedition. Together, the two performed demarcation criteria for the scientific disciplines and the scientists that would fit in well with their ambition of combining scientific exploration with the quest of publicity.

From the beginning, they emphasized deep sea research as the key component of the scientific tasks of the expedition. Although many other scientific disciplines were included on the expedition, all of which are part of the official report of the expedition (Bruun et al., 1956), deep sea research remained the main objective and cultural symbol of the expedition. Mielche concluded in his report about the publicity section: "Deep-sea research was our banner; science formed the ram behind which we advanced with our typewriters, microphones, and cameras" (Mielche, 1956: 293). Deep sea research was different from other disciplines on board in that it carried with it some degree of adventure. Evoking elements of heroic and scientific exploration, it entailed exploring some of the few "white patches left on the map of the world" (Mielche, 1953: 4).

Moreover, deep sea research combined youth with historical tradition. When Bruun and Mielche (1948) officially contacted the government in 1948 about their plans for a new Danish oceanographic expedition, they emphasized the vital importance of providing the upcoming successors to important Danish oceanographers such as Johannes Schmidt with expedition experiences. They argued: "It is essential that the present generation of researchers within this field is given a chance to hand over their experience to new generations, which will only happen if soon another large Danish expedition is equipped" (Bruun and Mielche, 1948: 2). While continuing the Danish tradition within oceanography, the expedition also was to promote the younger generation of researchers.

In a joint article presenting their expedition scheme to readers of the English-language magazine of the Danish Ministry for Foreign Affairs, Mielche and Bruun (1950) translated this emphasis on the young generation to their common concern for popularization and publicity. Rhetorically, they acknowledged that "it is understandable if specialists who have spent their life on a particular study should shrink from superficialities, preferring to publish their results in scientific journals in which they have room enough for an adequate treatment of the issues at hand and find readers with the same outlook and interests as the writer. ... Discoveries which, for the reporter, held great possibilities of big headlines have been catalogued and filed in careful sequence with other discoveries which had little 'meat' on them as far as the newspaper reader was concerned" (Mielche and Bruun, 1950: 15). It was understood that younger scientists with less than a life's devotion to a particular subject would welcome the opportunity of making big headlines.

The cultural cartography of science and the media pioneered by Mielche and Bruun also included a new emphasis on commercialization, which had to be carefully monitored in order not to interfere with the scientific aspects of the expedition. Relying solely on publicity rights and royalties on articles, photographs, films etc., the publicity section operated on a commercial basis. However, it was commonly accepted among the expedition planners that the commercial aspects of the expedition had to be strictly limited to the publicity section and, moreover, needed to be carefully controlled so as to comply with the autonomy of science. Mielche and Hendil, for example, began their draft on the relations between science and publicity by affirming the priority of the scientific work in relation to the work of the publicity section: "All observations and all discoveries that might be of interest to the publicity section have to be reported immediately to Dr. Bruun who will then hand over the information to this section" (Mielche and Hendil, 1949: 1). In return, the scientific legitimacy would be used to

substantiate the work of the publicity section: “The reader will know in advance that the popular articles are well founded on fact because they will be the result of close cooperation between journalist and scientist” (Mielche and Bruun, 1950: 17).

Despite the attention given to how to manage the commercial aspects of the expedition, the very idea of commercializing the publicity of the expedition did meet with some criticism. After Bruun in June 1950 had announced the expedition schedule to the public, Tage Taaning, editor of the weekly magazine *Landet*, felt the urge to publicly blame the *Galathea* Deep Sea Expedition for being all about publicity, “a cruise whose entertaining nature naturally nobody will doubt” (Taaning, 1950). Bruun brushed off Taaning’s criticism by referring to the fact that Taaning’s brother was in charge of carrying out oceanographic research for the Committee for Denmark’s Fisheries Research and might have felt that he was being put at a disadvantage because of the financial support of the *Galathea* Deep Sea Expedition (Bruun, 1950a). Another and even more prominent member of the Danish community of oceanographers, Th. Mortensen, later in a letter to Bruun expanded on this critique:

But, dear Dr. Bruun, I must ask you to get rid of Hakon Mielche. He is making the expedition very unpopular at home. The commercial exploitation of the expedition arranged by Mielche is distasteful and may only damage the expedition. And with respect to advertising the *Galathea* Expedition wherever it arrives, he is utterly superfluous—and probably harmful too. The pure scientific themes are enough advertisement. For the sake of the expedition, I beg you: Cut the ties with Hakon Mielche. (Mortensen, 1950)

Mortensen’s comments were sparked by the public campaign against Mielche and the publicity section that a few Danish newspapers had raised for other reasons in late 1950, see below. They do, however, reflect the unease with the idea of combining science and publicity shared by many older scientists (Mortensen was, at the time of writing, 81 years old). The cultural cartography of science vs. publicity that Mielche, Hendil and Bruun drew up challenged existing cartographies in which whereas publicity was dirty and commercial, science was pure and objective, and, thus, the two were simply too far apart to ever meet.

#### 4. The sea serpent as boundary object

In realizing science–media partnerships such as the *Galathea* Deep Sea Expedition, boundary workers establish and mediate across more or less well-defined boundaries between science and the media. The cultural cartography of Mielche, Hendil and Bruun defined the partnership by means of differentiating between science and the media institutionally and functionally. Their boundary work pulled the two much closer together than before and thus introduced new uncertainties that, as we shall see later, resulted in “contests of credibility” (Gieryn, 1999). First, however, I wish to introduce another boundary tool, i.e. one boundary object, which also helped enable the boundary workers to mobilize specific interest in their expedition scheme.

Originally, Star and Griesemer (1989: 393) coined the concept of boundary objects to describe “those scientific objects which both inhabit several intersecting worlds ... *and* satisfy the informational requirements of each of them” (emphasis in original). The concept of boundary objects is particularly useful in analyzing the relations between scientists and journalists in the case of the *Galathea* Deep Sea Expedition as it also allows detailed attention to the scientific objects used to construct the partnership between science and the media. Whereas Star and

Griesemer (1989) originally compiled a list of different types of boundary objects, Bucchi (1998) mentions scientific metaphors and paradoxes such as cold fusion and the Big Bang as prototypical boundary objects relating to public communication of science. Similarly, I would like to discuss one boundary object of the *Galathea* Deep Sea Expedition that was also part metaphor, part paradox: the sea serpent.

Like cold fusion and the Big Bang, the sea serpent was a theoretical construct, widely propounded by Bruun ever since the return of the Dana Expedition where he had observed the capture of an eel larva of almost 2 meters in length. The sea serpent also attracted public attention and thus generated extensive publicity for the expedition. In effect, it became the public icon of the expedition. Facilitating communication amongst scientists and journalists, the sea serpent brought about mutual alignment between the science and the publicity components of the expedition. The sea serpent was scientifically stable enough for Bruun and many of his colleagues, and it had the media star-like qualities which served Mielche and the publicity section well. Unlike the public boundary objects mentioned by Bucchi (1998), surprisingly the sea serpent appeared to be entirely uncontroversial.

The sea serpent was the reason why, in the first place, Hakon Mielche approached Anton Bruun in June 1941. In the public lecture and in the newspaper quotation mentioned above, Bruun had elaborated on his idea of discovering the sea serpent. Referring to the many enduring myths of sea serpents told by seamen and others throughout the ages, Bruun maintained that it might be possible on yet another ocean expedition to discover the creatures which had given rise to such myths and thus ground them in scientific observation. For Bruun, the long Dana eel larva gave rise to speculations about adult eels reaching monstrous sizes.<sup>2</sup> Even if this might not be the case, Bruun assured that further exploration of the deep ocean would surely result in the discovery of real sea serpents (Frib., 1941; Mielche, 1951a).

Always on the lookout for new adventures, Mielche transformed Bruun's scientific sea serpent into a public one well suited for the media. With his eye for good news, Mielche immediately envisaged the headlines in the national and international press: "Danish Ship Captures the Sea Serpent: A Sea Serpent 50 Meters Long Has Just Been Dragged to Cape Town by Danish Scientists" (Mielche, 1951a: 21). The sea serpent, then, from the outset became a boundary object providing scientists and journalists with common ground despite the professional and structural differences enforced by the boundary work performed. In their joint article describing the *Galathea* Deep Sea Expedition, Mielche and Bruun (1950) described how the sea serpent would be able to relate science and the media in a reasonably straightforward manner:

When it is considered that the larva of the freshwater eel caught in the sea is seven centimeters long, and the conger eel's 12–14 centimeters, it is easy to imagine the thrill of drawing in the lines from a few thousand metres' depth in the area where the "Dana" expedition caught a larva of an unknown eel 184 centimeters long. If this eel is caught, not only will it be a new species in the scientific register, but it will be easy to imagine the reporter turning out a new version of the old story of the great sea serpent. (Mielche and Bruun, 1950: 18)

Simple linear extrapolation from the Dana eel larvae results in a sea serpent of around 4 meters in length which is much but perhaps not all that spectacular. At least, it was a long way from the 50 meters that Mielche was dreaming of. In other contexts, however, Bruun went even further in his speculations about the size of the sea serpent (Wolff, 2002). Referring to the tenfold increase in length of the *Anguilla* eels, he sometimes hypothesized that the sea serpent could reach almost 20 meters in length.

Surely 20 meters would be enough for Mielche, the reporter, to turn out new stories about the sea serpent; popular stories that revolved around nature's monstrosity but also around the ability of science to domesticate nature and debunk ancient myths. Whereas previous myths of

the sea serpent were founded in the wildness of nature and based on oral tradition, the part scientific, part public sea serpent imagined by Mielche and Bruun (1950) would result from scientific observation and rely on the mass media for distribution. Yet, at the time it also constituted the joint basis for combining scientific exploration with publicity. From the point of view of scientists like Bruun, the sea serpent was simply another scientific result, albeit a very noticeable one, which almost already had its place in the scheme of ocean biology. From the point of view of journalists like Mielche, the sea serpent was nothing more than good news, good science news.

The sea serpent boundary object symbolized and thus made more credible the close connection between science and the media that formed the basis of the *Galathea* Deep Sea Expedition. It became an important part of the public image of the expedition and the expedition mascot (Nielsen, 2006). Perhaps because of its uncertain and myth-like character, the sea serpent could adopt many positions, take on various meanings and fulfill different functions for the scientists, journalists, and others involved in the collective organization and management of the expedition. The sea serpent thus formed a common boundary object for science and the media, supplying these different social worlds with resources of collaboration, conflict and negotiation.

The sea serpent surely lived a full life in public, but never materialized as a scientific object. In the end, however, failing to discover the scientific sea serpent turned out to be of little importance for the success of the expedition (Bruun et al., 1956). This underlines the interpretation that the real and most important role of the sea serpent was as a boundary object mediating between the science and the publicity sections of the expedition. In his autobiography, having gone through his own story of the *Galathea* Deep Sea Expedition, Mielche returns once again to the sea serpent:

And the sea serpent?

I'm sorry, I almost forgot. But it had done its duty by the time we took off. It was the catalyst that got the whole idea going.

I assume full responsibility for the exploitation of the poor thing. But Bruun believed that one day it would be found—and he stood firm until the day he died. (Mielche, 1979: 232)

As hinted by Mielche, the sea serpent was more than a noteworthy scientific hypothesis and a possible headline in the press. It also served as a medium for the exploration narrative that structured both scientific and public accounts of the expedition. Thus, discovering the sea serpent was an important element in motivating the expedition to scientists and to the general public. It provided the expedition with an aura of heroic adventure and exploratory excitement that in most other instances had been deliberately removed from the field sciences in the first half of the twentieth century (Kohler, 2002; Ries, 2002; Sörlin, 2005).

## 5. Contests of credibility: negotiating the science–media partnership

So far, the article has dealt with the construction of the science–media partnership of the *Galathea* Deep Sea Expedition in terms of boundary work, boundary workers and boundary objects. This final section discusses the few contests of credibility that the inclusion in the expedition of Mielche's publicity and press section gave rise to. As a result of the public critique, the publicity section was restricted to a few channels of communication, weekly magazines and films. Serving the daily press was left to the naval press officers and to the scientists affiliated with the expedition. However, the very idea of a close working relationship between scientists and jour-

nalist survived the affair with its public legitimacy intact. Upon returning home, Mielche and his fellow members of the expedition unchallenged were able to celebrate the success of their science–media partnership.

In December 1950, two months after departure, the publicity section and Hakon Mielche in particular, encountered much criticism in the Danish press. Several newspapers blamed Mielche for holding back news and other kinds of information about the expedition. Consequently, the expedition was referred to as the “monopoly expedition” (Editorial, 1950). Although most of the critique was directed personally at Mielche, it did have more general consequences for the relationship between the science and the publicity sections of the expedition.

Some journalists condemned the fact that Mielche’s publicity section had contracted with few newspapers, primarily the provincial press, and only one weekly magazine, namely Mielche’s main employer *Illustreret Familie-Journal*. They argued that Mielche’s monopoly excluded all of the larger national newspapers based in Copenhagen from bringing news and features from the expedition. One influential newspaper, *Politiken*, whose science reporter Niels Blædel generally took a sympathetic view of the expedition, maintained that, because of the huge public support offered to the expedition, morally as well as financially, it was the duty of the expedition “to inform the general public about the results and discoveries and this requires the press to have a free choice of sources and an open competition for news from the expedition” (N.B., 1950b). Another newspaper, *B.T.*, more directly exposed to public criticism “Hakon Mielche’s monopoly profit which results from an expedition that is paid by the State, but only communicated to the public in one magazine, *Familie Journalen*” (Morten., 1950). In the public sphere, the commercial basis of the publicity section that originally had served to keep separate science and publicity proved counterproductive.

In order to ensure his rights, Mielche had arranged for a declaration to be signed by each and every member of the expedition concerning the property rights over “all observations, records, collections, pictures etc. taken, obtained, acquired and secured during the Expedition” (Komiteen for Den danske Dybhavsekspedition, 1950b). By signing the declaration, each expedition member promised to “bind myself not to publish in the form of theses, articles, lectures, statements to the press or through the radio or in any other manner whatsoever the said results either against payment or gratuitously; moreover I bind myself to take care that letters, diaries, and writings of any kind, photographs etc. sent to Denmark or to any other country during the cruise are not, either in whole or in part, used by the recipient or recipients for publication, either in the original or in a revised or adapted form.”

Because of the declaration, all expedition members were excluded from narrating to a wider audience their experiences at home. One local paper in Western Jutland ran a letter from a local mariner to his family and, then, faced protests from a competing newspaper that had contracted with Mielche (*Vestkysten*, 1950). Another local newspaper openly defied Mielche’s declaration, or “coronation charter” as it was also known, running a private letter from the chief steward of the *Galathea* in order to “take on Hakon Mielche” (*Bornholms Tidende*, 1951).

Making things worse for the publicity section, one prominent American scientist, marine microbiologist Claude E. ZoBell, simply refused to sign the declaration. In a letter to Anton F. Bruun, ZoBell (1950) explained that “both University and Naval authorities, however, object to my signing the ‘Declaration’ regarding the publication of results, since restrictions on the publication of scientific results is contrary to the policy of both organizations.” According to ZoBell, the University of California threatened to cancel ZoBell’s research contract and “any arrangements to participate in the Expedition.” The university, however, also proposed a slightly revised declaration according to which ZoBell would be permitted to publish his own research and nothing else.

In response, Bruun (1950b) assured ZoBell that “there will be no serious situation.” The intention of the declaration was to “prevent anarchy,” Bruun wrote, adding: “I should hate to be in the situation not to be able to protect your natural right to your microbiological material, because somebody else had sniffed some sensational news and sent them to ‘Science’ for publication.” Bruun, therefore, accepted the revisions of the declaration proposed by the University of California administrators. ZoBell (1951) replied that he felt “confident that the revised Declaration will prove to be acceptable to all parties concerned.”

Although Bruun and ZoBell agreed, the incident added to the bad publicity generated in the Danish press. ZoBell’s refusal was widely reported by the newspapers as yet another failure of Mielche’s publicity section (*Nationaltidende*, 1950; N.B., 1950a). Consequently, the executive committee of the expedition had to take action. Since Mielche and Bruun were away, Professor Spärck of the Zoological Museum, who served as the home organizer of the expedition, Vice Admiral Vedel, and Prince Axel met up to handle the difficult situation. They all agreed that with respect to the publicity section changes had to be made and put out a press statement on the matter (*Galathea-ekspeditionens forretningsudvalg*, 1951). However, they forgot to inform Mielche, Bruun, and the rest of expedition members about their decision.

The three executive committee members also arranged a meeting with the Copenhagen newspaper editors in order to find out what could be done. Jointly, the parties agreed that Mielche’s special arrangements with respect to feature and news articles had to be abandoned. In future, Spärck was to collect articles from the scientists aboard the *Galathea* and distribute them to the press. Moreover, the ship’s own press officer and the naval press office in Copenhagen were to take over the production and distribution of news telegrams. On a press conference on 30 January 1951, the committee presented the new publicity arrangement of the expedition and the press responded by saying that the arrangement would produce a calmer atmosphere about the science–media collaboration of the expedition (Tikili., 1951).

The decision, however, did cause quite a stir. Naturally, the national press, except for Hendil’s *Ekstra Bladet*, was happy about the effect of the public critique (Hendil, 1951a; Pedersen, 1951). Aboard the *Galathea*, mainly because the crew felt they were ill informed about developments at home, the situation reached “a state of psychosis” (Spärck, 1951a). Having heard the news about the press conference, but lacking detailed information about the “new publicity arrangement,” Mielche (1951b) in a telegram to Hendil threatened to leave the expedition immediately. At the time, the executive committee had summoned Mielche to Copenhagen, but in the telegram he simply refused “to be taken to task by the committee.” To Hendil, Mielche previously had declared that the idea of Spärck running the news agency of the expedition was doomed (Hendil, 1951b).

Upon Mielche’s return to Copenhagen, however, things seemed to settle down. He agreed to give up the news service of the *Galathea* in order to concentrate fully on the production of films and weekly articles to *Illustreret Familie-Journalen*. In return, the committee was to express its full support for Mielche (Spärck, 1951b). Because of the incident, however, Mielche had to let go of the other journalist of the publicity section, Jørgen Benzon, who wrote exclusively for the provincial press. All of the contracts with the provincial press had been ended because of the changes made and, consequently, in the summer of 1951 Benzon was made redundant as expedition journalist (Mielche, 1951c). One of the photographers, Jørgen Nielsen, had also left the expedition already in the winter of 1950/1, although for personal reasons (Mielche and Bruun, 1951). As the expedition approached its primary research destination, the Philippine Trench and other deep sea trenches in the East Pacific, the publicity section aboard was reduced to one journalist, i.e. Mielche, and two photographers.

*Evaluating the science–media partnership of the Galathea Deep Sea Expedition*

The science–media partnership of the *Galathea* Deep Sea Expedition faced public contests of credibility that mixed personal issues with the governing relationship between science and publicity. On the one hand, the press reproached Mielche and the publicity section for failing to serve public interests. The original boundary work performed by Mielche and Hendil (1949) according to which the publicity section was granted full autonomy simply backfired. In order to separate science from publicity, they had emphasized financial independence and publication rights. In the public debate, however, their boundary work was problematized. It not only hindered important parts of the press from independently reporting the expedition to the public. It also accentuated the publicity aspect of the expedition to the extent where scientific interests almost became secondary, cf. the ZoBell affair. Imposing limits on the functional areas of Mielche’s publicity section, the executive committee again stressed the scientific and naval aspects of the expedition (*Galathea*-ekspeditionens forretningsudvalg, 1951). The publicity section survived as an expedition institution, but one that was much more subordinate to the scientific and “sailing” sections of the expedition than it had been at the time of departure.

Evaluating the efforts of the expedition, neither Mielche nor Bruun, nor any other expedition member, made any attempt to assess the collaboration between science and the media. In the edited volume summing up the most important results of the expedition, Bruun (1956: 28), however, acknowledged that “[t]he chief credit for discharging the tasks as described in the chapters that follow is due to the interest and spirit of cooperation, shown by an increasing number of people, from the time when Captain Greve first listened to my vague outlines of a deep-sea expedition, many years ago, till the realization of all our dreams in a fully manned and well-equipped ship.” Mielche (1956), for his part, refrained from discussing the contests of credibility encountered by the publicity section. Instead, confirming the success of the section, he simply listed the “35 lectures with colour films about Denmark,” the “30 kilometers of colour film,” the “2,000 monochrome photographs and a similar number of colour pictures,” and the numerous reports about the expedition which “exceeded 2,000 columns, exclusive of pictures series” (Mielche, 1956: 292–3). He also pointed out that the expedition had “broadcast about Denmark and the expedition” in 16 different countries, not to mention the fact that members of the expedition “were TV stars in America, and broadcast in pidgin English to the natives of New Guinea about the Danish royal family and Danish agriculture and shipping.” Mielche, also, did acknowledge the “teething troubles” encountered, adding that “we gained a good deal of experience which may be useful to future expeditions of this kind.” Therefore, he concluded on a part celebratory, part cautious note: “The *Galathea* Expedition marked a further step forward in the study of the Seven Seas; but, as Dr. Bruun has said, the Great Sea Serpent has yet to be caught.”

With the notion of the sea serpent as a boundary object that mediates between science and the media in mind, we may take Mielche’s final remark as a symbolic comment: despite the great pains taken to construct, negotiate and maintain the science–media partnership as symbolized by the sea serpent, the result was not entirely positive. As an effort to build up in Denmark closer and, perhaps, durable collaborations between scientists and journalists, the expedition had little impact. Mielche, for one, never again took on science journalism. Similarly, the field of science journalism was left in the hands of a few dedicated individuals. The attempt in 1949 to organize Danish science journalists failed and it was not until the early 1970s that the Association of Danish Science Journalists was well established (Nielsen and Nielsen, 2006). In contrast to the UK and the US where science journalism flourished in the post-war years (Gregory and Miller,

1998; Lewenstein, 1992), and even with the pioneering effort of the *Galathea* Deep Sea Expedition, in Denmark science journalism, not to mention science–media partnerships, remained a fringe activity long after the expedition.

Even so, the historical consequences of the expedition and similar episodes in the history of science and the media after World War II may be much more far-reaching than suggested by the above remarks about science journalism in Denmark. Even if, to some extent, the science–media partnership was seen as deviant, the expedition played an important role in normalizing the very idea. The recent *Galathea 3* Expedition from 2006 to 2007, which also combined science and publicity, demonstrates that the full impact of the second *Galathea* Expedition is still visible, even today (*Galathea 3*, 2007). The *Galathea* Deep Sea Expedition is an important historical event which even now serves as an example to scientists, journalists and others wishing to build up science–media partnerships. More generally, the history of the *Galathea* Deep Sea Expedition may also serve as an important reminder that the dominant discourse mentioned in the introduction itself is a historical construction, made up of boundary work, boundary objects and repeated contents of credibility with respect to actual and historical relations of science, the media, and the public.

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## Notes

- 1 Immediately after the war, movie actor Errol Flynn cooperated with Scripps Institution of Oceanography to produce the film *Cruise of the Zaca* (1946). The film stars “Hollywood swashbuckler Errol Flynn and Scripps Professor Carl Hubbs, with a cameo appearance by Harald Sverdrup” (Hammons, 2003). It is a professional film of a scientific cruise to Mexico taken aboard Flynn’s yacht, *Zaca*. Flynn’s father, marine biologist T. Thomson Flynn, and Carl Hubbs participated on the cruise.
- 2 Somewhat later, Danish zoologists Jørgen Nielsen and Verner Larsen (1970) concluded that the giant Dana eel larvae really belonged to the fish species *Leptocephalus* where the relationship between larvae and adult individuals is completely unknown.

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